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Final Report

Adit & Shaft Project, Phase 14
Silver Bow County, Montana
Butte Area Sites
IFB 4829-G

January, 1987

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Final Report

Adit & Shaft Project, Phase 14
Silver Bow County, Montana
Butte Area Sites
IFB 4829-G

January, 1987

Prepared for: Mr. Richard Juntunen, Chief
Abandoned Mine Reclamation
Bureau
Department of State Lands
1625 11th Ave.
Helena, MT 59620

Prepared by: L.C. Hanson Company
Consulting Engineers
P.O. Box 299
Helena, MT 59624

Project Inspector: Joseph Murphy

win 96-87415

I. Introduction

A. Project Objectives

The Phase 14 Adit & Shaft Project was undertaken to eliminate the public safety hazards resulting from unreclaimed mine openings at several abandoned hardrock mines in Silver Bow County, Montana. Closure of dangerous shafts and adits through backfilling, and/or fencing was accomplished to eliminate accidental entry.

B. Project Location

The project covered seven sites located near Butte, Montana and twenty miles to the south in the Highland Mountains. Legal descriptions are listed below and site locations are shown on the vicinity map contained herein.

Butte Mining District

Butte West Sites	T3N R8W Secs. 9 SE, 10 SW, 15 W, 16 NE
Butte - Zenith Site	T3N R8W Sec. 18 NE
Empire - Strike Site	T3N R8W Sec. 22 SW
Green Lake Site	T3N R8W Sec. 15 SE
Nissler - Forest Service Site	T3N R8W Sec. 30 NE

Highland Mining District

Gold Hill Site	T1S R8W Sec. 12 S
Murphy - Only Chance Site	T1N R7W Sec. 31 SE

C. History

Hardrock mining has taken place in Montana since 1862 and was essentially unregulated from a reclamation standpoint for over one hundred years. This resulted in thousands of hazardous shafts and adits in mining districts across the state.

A brief history of mining districts included in the Phase 14 Adit & Shaft Project follows.

Butte Mining District

Placer gold was discovered in Silver Bow Creek in 1864 and soon after the first lode was staked. After the placers were exhausted Butte was operated as a Silver Camp, but by 1882, copper mining became the predominant metal. Considerable amounts of zinc and manganese have also been mined.



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Highland Mining District

Placer gold was first discovered in the Highland Mountains in 1866. The next year a twenty-four stamp mill was erected to treat the ores of the lode mines in the area. The most important mine was the Butte - Highland, including the Murphy & Only Chance properties. This group is credited in producing over 63,000 ounces of gold.

D. Site Description And Problems

The sites included in this project are located in or near residential areas, historic sites, close to public roads or in recreation areas. All mine openings threatened public safety. The shafts involved were of depth great enough to prevent unaided escape upon entry. Adits were reclaimed to protect the curious from unsuspected dangers.

II. Description of Project Reclamation

A. Project Planning

Backfill was recommended for all mine openings to permanently eliminate the hazards. Many landowners refused to allow this, insisiting instead on perimeter fencing. This method does accomplish the goal of preventing accidental entry but is semi-permanent in nature and may require maintenance in the future.

B. Chronological History

Pre-Bid Conference	May 1, 1985
Bid Opening	May 15, 1985
Contract Award	May 16, 1985
Contract Awarded To:	

Bullock Brothers
P.O. Box 66
Basin, MT 59631
(406)225-3260

Pre-Construction Meeting	June 11, 1985
Notice to Proceed	June 20, 1985
Began Work	June 13, 1985
Project Completed	July 23, 1985

C. Equipment

Loader
Post Hole Auger

D. Construction Operations

The Contractor performed the following:

1. Backfilled 2 adits
2. Backfilled 7 shafts
3. Installed 6' chainlink fence at 1 site
4. Installed combination barbed and woven wire fence at 3 sites
5. Revegetated all areas disturbed by construction activities

III. Cost Summary

A. Final Payment Request

A copy of the Final Payment Request is contained in Appendix A. That document contains the final quantities and costs for each work item.

B. Change Order

No Change Orders were executed during the course of the project.

C. Cost Per Site / Unit

The following summary describes the work performed (with estimated or measured quantities) and the total cost for each site:

- | | |
|--|-------------|
| 1. Butte West Site | \$ 2,140.00 |
| a. Backfill 2 adits & 4 shafts
(263 c.y.) | |
| b. Install wire fence (6.4 rods) | |
| c. Install hazard signs (4 each) | |
| d. Seed, fertilize & mulch | |
| 2. Butte-Zenith Site | \$ 2,748.00 |
| a. Backfill 1 shaft (680 c.y.) | |
| b. Seed, fertilize & mulch | |

3.	Empire-Strike Site	\$ 951.00
	a. Backfill 1 shaft (227 c.y.)	
	b. Seed, fertilize & mulch	
4.	Gold Hill Site	\$ 3,790.00
	a. Install wire fence (29.3 rods)	
	b. Install hazard signs (12 each)	
	c. Seed, fertilize & mulch	
5.	Green Lake Site	\$ 7,194.00
	a. Install 6' chainlink fence (691 l.f.)	
	b. Install hazard signs (5 each)	
	c. Seed, fertilize & mulch	
6.	Murphy-Only Chance Site	\$ 4,129.00
	a. Install wire fence (38.2 rods)	
	b. Install hazard signs (18 each)	
	c. Seed, fertilize & mulch	
7.	Nissler-Forest Service Site	\$ 407.00
	a. Backfill 1 shaft (90 c.y.)	
	b. Seed, fertilize & mulch	

	Total Project Cost	\$ 21,359.00

IV. Summary

A. Completed Reclamation

The project resulted in the complete plugging of some adits and shafts and limits access to other shafts by installed fences. Hazard signs were installed where appropriate. Revegetation of disturbed areas was accomplished.

B. Comments

The Contractor completed the work to the minimum standards allowed. Much of the work had to be redone before acceptance.

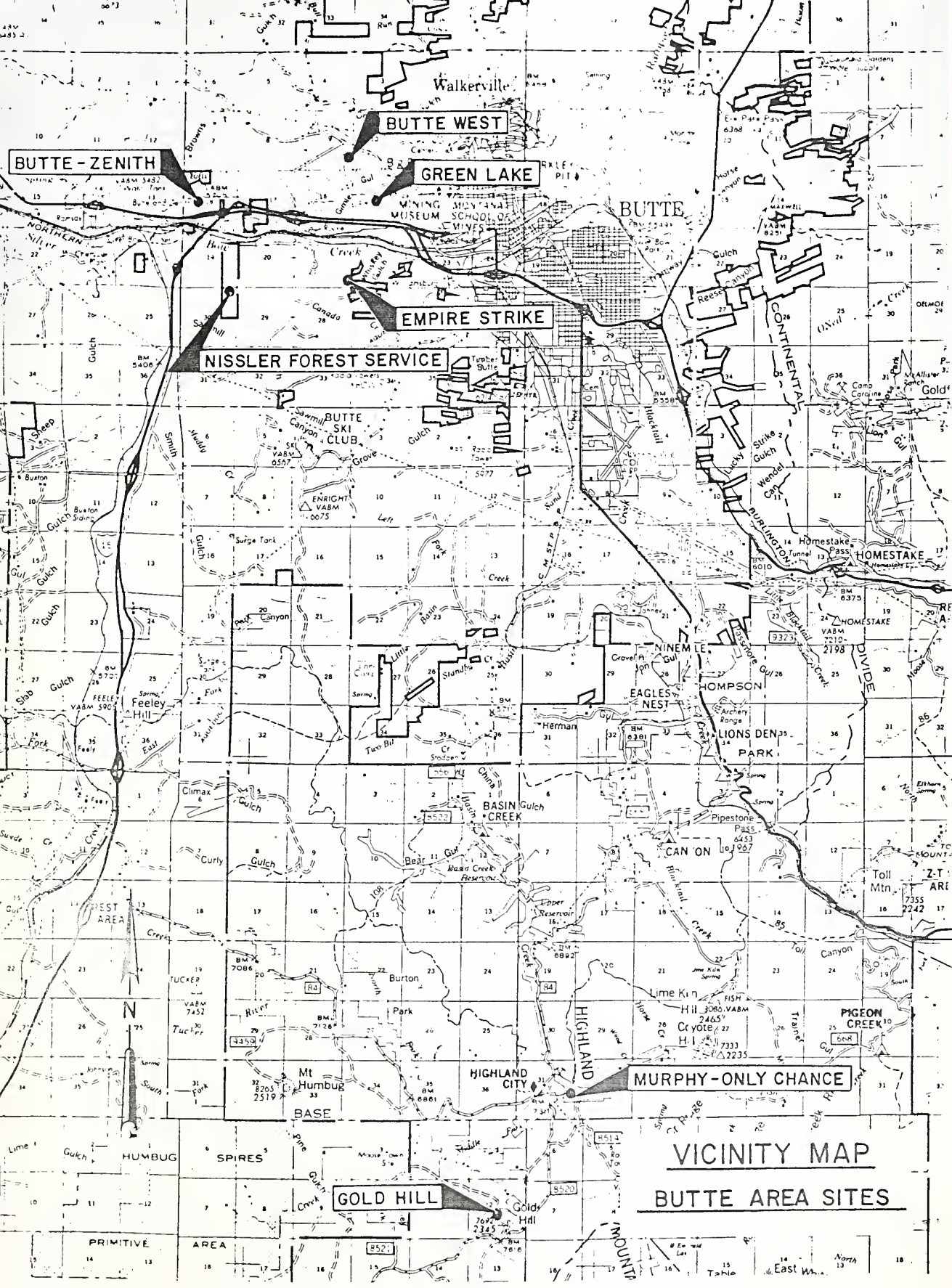
Contractor was very disorganized and the designated superintendent was absent from the project much of the time.

Liquidated damages could have been assessed for four (4) days but such penalty was waived by the Owner.

Monitoring of all sites should be undertaken periodically to insure all backfilling and fencing work and revegetation efforts remain intact.

V. Slides

The slide log and slides are contained in Appendix B.



APPENDIX A

RECEIVED

FROM June 20, 1985 TO July 19, 1985

JUL 31 1985

PROJECT NAME ADIT & SHAFT PROJECT, PHASE 14 - BUTTE AREA SITES

LOCATION SILVER BOW COUNTY

PROJ. NO. IFB 4829-G

LOWELL C. HANSON CO.

NAME OF CONTRACTOR BULLOCK BROTHERS, INC.

ADDRESS PO Box 66 BASIN, MT 59631

CHANGE ORDERS			CONTRACT STATUS			
No.	Description	Amount	Total Amount	Completed Amount	Uncompleted Amount	Per Cent Complete
			21,877.00	21,359.00	-0-	100
Total Change Orders			-0-	-0-		
CONTRACT TO DATE INCLUDING CHANGE ORDERS			21,877.00	21,359.00	-0-	100

TOTAL RETAINAGE \$ _____
 SECURITIES ON DEPOSIT \$ _____
 ADJUSTED RETAINAGE \$ _____

*For use only when securities are on deposit in lieu of 10% retainage.

COMPLETED TO DATE \$ 21,359.00
 PLUS MATERIALS ON SITE \$ -0-
 TOTAL COMPLETED TO DATE \$ 21,359.00
 *10% OR ADJUSTED RETAINAGE \$ -0-
 TOTAL AMOUNT EARNED TO DATE \$ 21,359.00
 LESS PREVIOUS PAYMENTS \$ -0-
 AMOUNT DUE THIS PAYMENT \$ 21,359.00
 LESS 1% TAX \$ 213.59
 TOTAL DUE CONTRACT \$ 21,145.41

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Bullock Brothers, Inc.
 (Contractor)

By Kathleen Bullock

Date 7/27/85

RECOMMENDED BY:

L. C. Hanson Company
 (Engineer)

By James P. Salmon

Date 7/30/85

Approved By:

Montana Dept. of State Lands
 Owner

ITEMIZATION OF QUANTITIES AND COSTS

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	WORK COMPLETED TO DATE	COST COMPLETED WORK	PERCENT COMPLETE
1.	BACKFILL MINE OPENINGS	LUMP SUM	5,000.00	LUMP SUM	5,000.00	100
2.	FENCE - CHAIN LINK 6'	725 L.F.	9.00	691 L.F.	6,219.00	100
3.	PANEL - DOUBLE 6' CHAIN LINK	4 EACH	170.00	5 EACH	850.00	125
4.	FENCE - WIRE TYPE CW OR CM	81 RODS	30.00	73.9 RODS	2,217.00	100
5.	SINGLE PANEL - TYPE CW	2 EACH	122.00	3 EACH	366.00	100
6.	DOUBLE PANEL - TYPE CW	36 EACH	168.00	34 EACH	5,712.00	100
7.	GATE - METAL 4' HEIGHT	10 L.F.	5.00	10 L.F.	50.00	100
8.	DEADMAN	3 EACH	20.00	3 EACH	60.00	100
9.	INSTALL STATE-FURNISHED SIGNS	36 EACH	15.00	39 EACH	585.00	100
10.	SEEDING, FERTILIZING, MULCHING	LUMP SUM	* 300.00	LUMP SUM	300.00	100
		TOTAL			<u>\$21,359.00</u>	
* State-established price						

APPENDIX B

Phase 14 Adit & Shaft Project
Butte & Highland Mining Districts, Silver Bow County
Slide Log

1. Nov., 1984	Before:	Butte West site #1 shaft - backfill
2. Nov., 1984	Before:	Butte West site #1 adit - backfill
3. Nov., 1984	Before:	Butte West site #2 shaft - backfill
4. Nov., 1984	Before:	Butte West site #2 incline - backfill
5. Nov., 1984	Before:	Butte West site #3 shaft - backfill
6. Nov., 1984	Before:	Butte West site #4 adit - backfill
7. Nov., 1984	Before:	Butte West site #5 shaft - fence
8. April, 1985	Before:	Butte & Zenith shaft - backfill site
9. April, 1985	Before:	Butte & Zenith shaft - backfill site
10. April, 1985	Before:	Butte & Zenith shaft - backfill site
11. April, 1985	Before:	Empire-Strike shaft - backfill site
12. April, 1985	Before:	Empire-Strike shaft - backfill site
13. March, 1982	Before:	Empire-Strike shaft - backfill site
14. June, 1984	Before:	Gold Hill shaft #1 - fence site
15. June, 1984	Before:	Gold Hill shaft #2 - fence site
16. April, 1984	Before:	Green Lake site - fence
17. April, 1984	Before:	Green Lake site - fence
18. July, 1986	After:	Green Lake site - vandalism
19. July, 1986	After:	Green Lake site - vandalism
20. June, 1984	Before:	Murphy-Only Chance shaft #1 - fence site
21. June, 1984	Before:	Murphy-Only Chance shaft #1 - fence site
22. June, 1984	Before:	Murphy-Only Chance shaft #2 - fence site
23. June, 1984	Before:	Murphy-Only Chance shaft #3 - fence site
24. Aug., 1984	Before:	Murphy-Only Chance shaft #4 - fence site
25. June, 1984	Before:	Murphy-Only Chance shaft #4 - fence site
26. June, 1984	Before:	Murphy-Only Chance shaft #5 - fence site
27. April, 1984	Before:	Nissler-USFS shaft - backfill site
28. March, 1982	Before:	Nissler-USFS shaft - backfill site



